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Boston South Station Air Rights Project

City of Boston
Kevin H. White—Mayor

Boston Redevelopment Authority
Robert J. Ryan–Director

Architect
WZMH Group Inc.—Architects & Planners

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South Station
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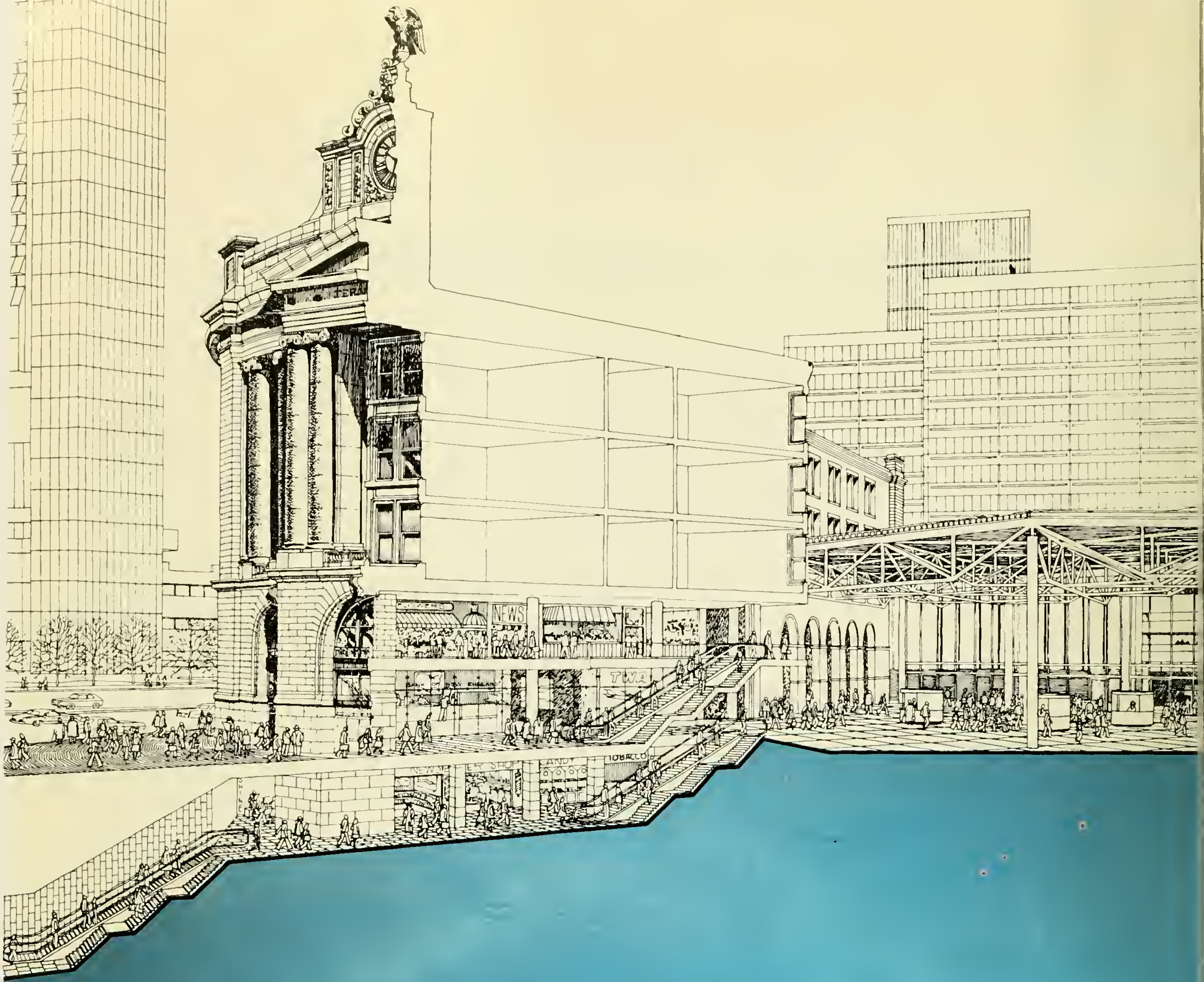
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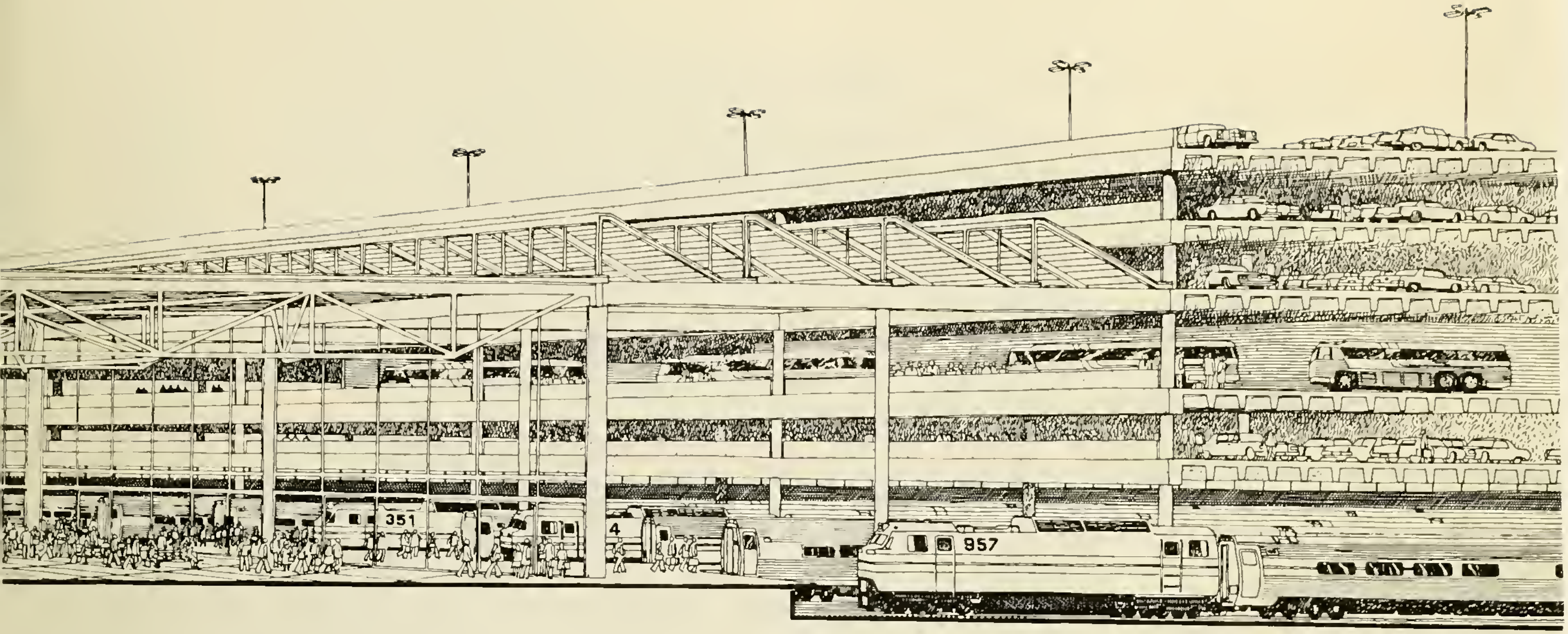


Carlos Diniz Associates

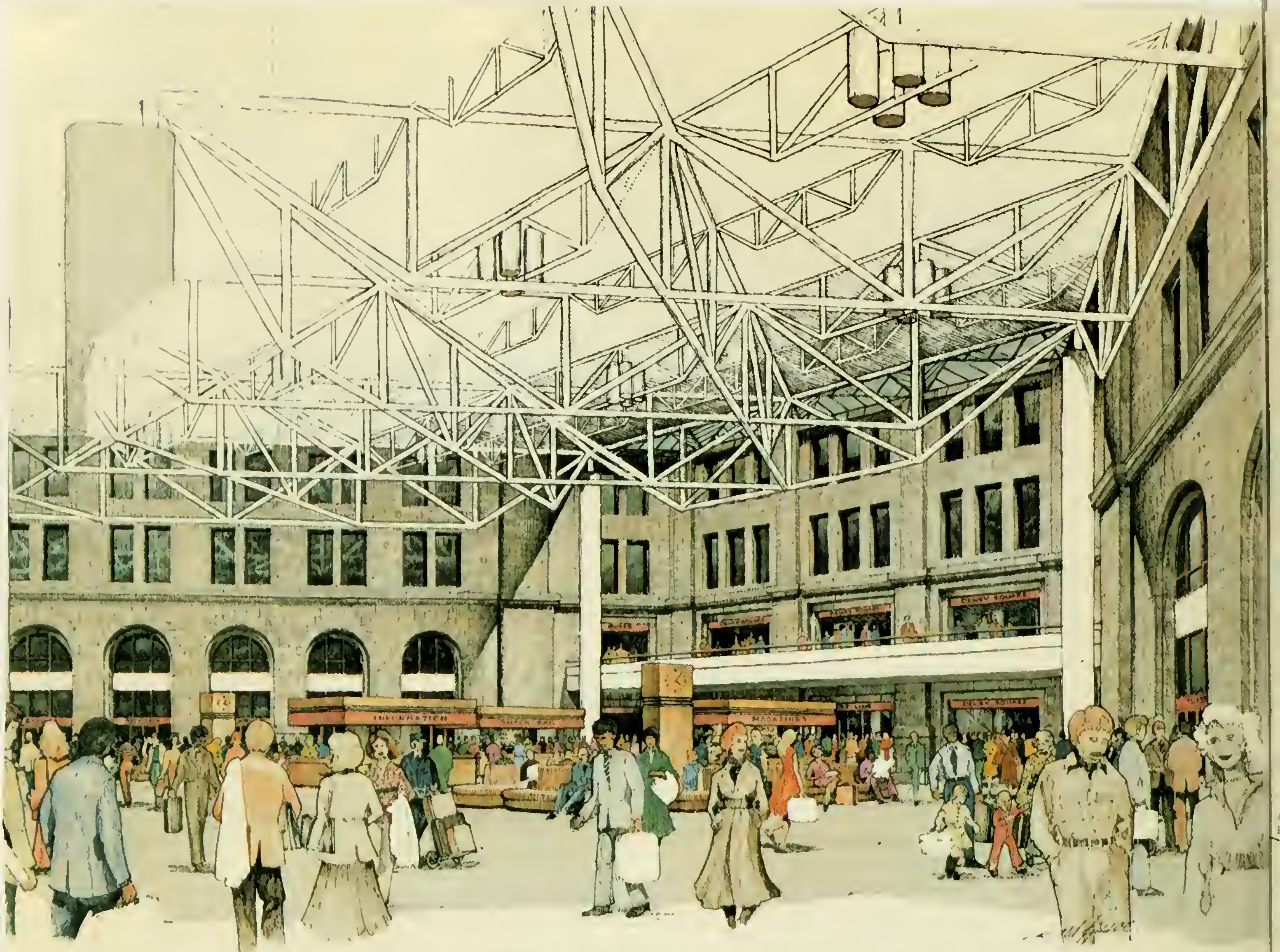
In the center of downtown Boston: A revitalized South Station as transportation hub

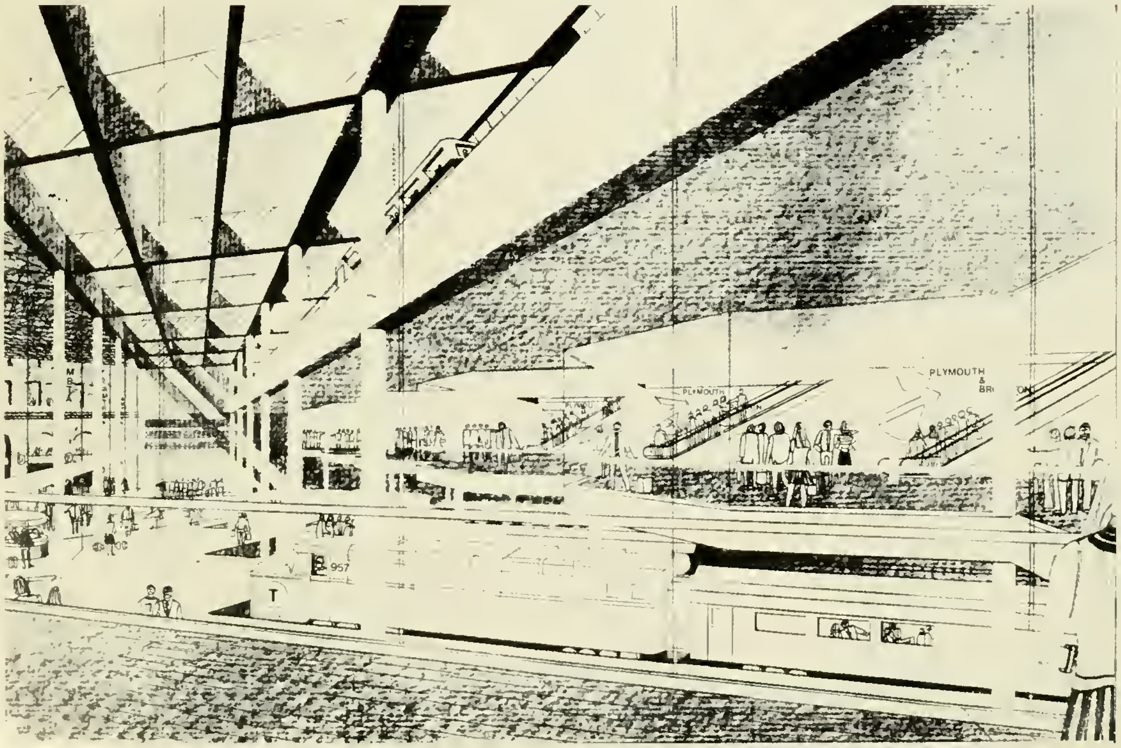
Once considered a white elephant and saved from complete demolishment only by being placed on the National Historic Register in 1975, Boston's once-grand South Station is to be the scene of an unparalleled mixed-use experiment based on "intermodal" transportation. It will be the first of its magnitude in the country.

The existing headhouse (photo right) is only the cornerstone of a package—intricately laced together like a patchwork quilt—which includes restoration and rehabilitation of the headhouse, a new concourse and trainroom, construction of bus terminal and parking facilities, and the development of air-rights above the bus terminal into office hotel and exposition center.

As such, this Transportation Center will become *the* locus near downtown Boston for auto, commuter and inter-city rail and bus, and subway connections for an expected 20,000 daily commuters and for thousands more who will shop and work there. It is an amazing example of cooperation and compromise among Federal, state and local agencies, and among architects and engineers in joint ventures, including DeLeuw, Cather/Parsons; Skidmore, Owings & Merrill; Hugh Stubbins Associates and Castro Blanco; The Architects Collaborative and Howard Needles Tammen and Bergendoft; and WZMH/Habib, Inc.

Projects of this scope are never easy—and as part of the Northeast Corridor Improvement Project the station already has a design history of ten years, and a yet-to-be-started construction plan of another ten years scheduled to begin in 1982. While the primary concern of this work has been transportation improvement, the broader implications for urban planning, energy conservation and resource management are impressive. As other regions of the country struggle with such issues, the Northeast Corridor project, and particularly Boston South Station, should be considered an example of the kind of high quality design work that can be achieved through individual, professional dedication. —*Janet Nairn*

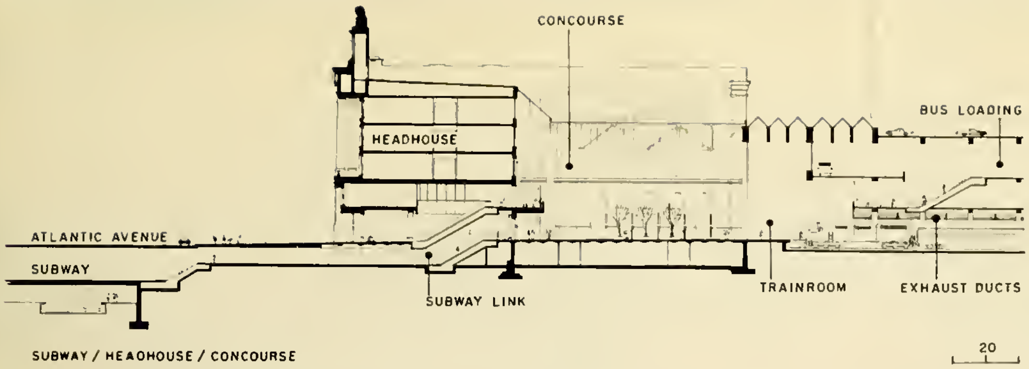




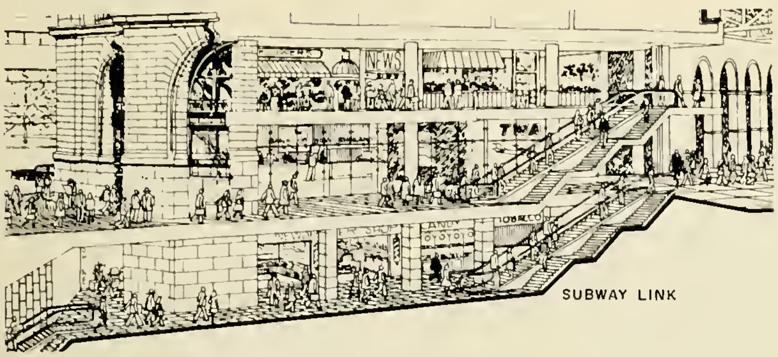
1

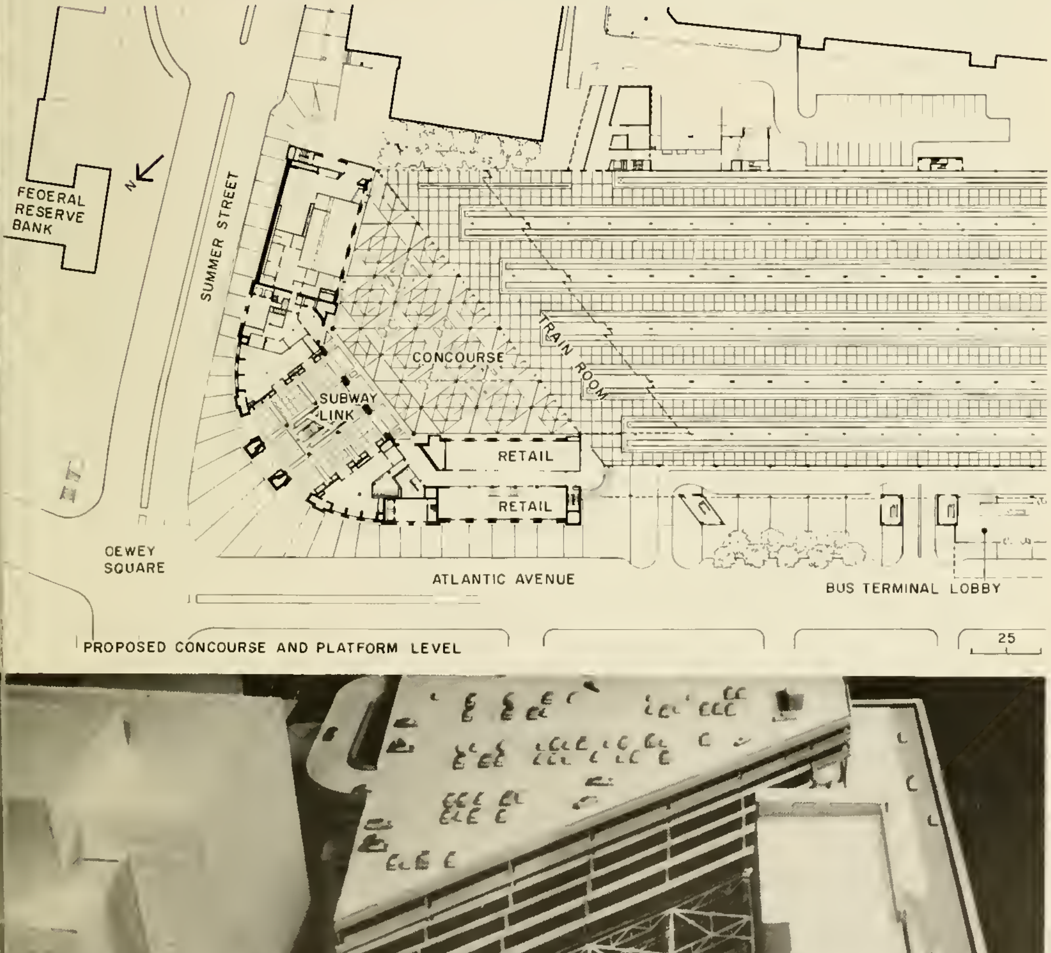
Tracks and headhouse are first order of business

There are plans to restore the exterior of the headhouse, as the only standing element of the original South Station, and to rebuild the west wing, which was demolished earlier. The area between the "back side" of the headhouse and the bus terminal (bottom right) will be enclosed for a grand and spacious concourse (rendering above) – the main thoroughfare for travelers and commuters to and from the train room (left); and the junction to the subway under Dewey Square and to the bus terminal along a second floor pedestrian bridge (see plans and sections right). Dispelling the dreary image of transit stations, the concourse will be bustling with activity, and filled with light through the truss-supported glass roof and glass end walls.

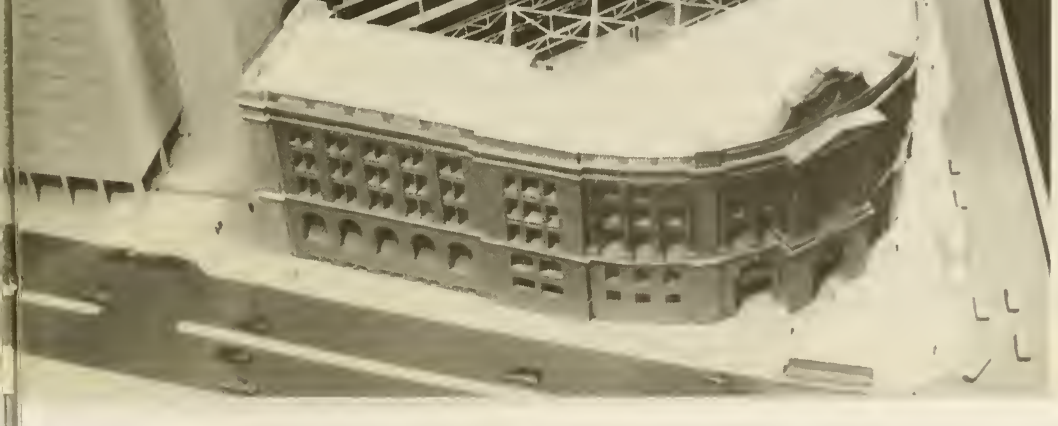


SUBWAY / HEADHOUSE / CONCOURSE





PROPOSED CONCOURSE AND PLATFORM LEVEL



"Boston now possesses a railroad passenger station which is not only the largest, the finest, and the most completely equipped of any in the country, but which has very few, if any, equals in the world." These words, spoken at the dedication of South Station in 1898, might well be re-used several years hence to describe the South Station Transportation Center, which will be this nation's first major "intermodal" complex. To serve nearly all types of ground transportation, the complex will include local, commuter, and inter-city rail and bus facilities; parking; a major subway station; and will eventually be topped off with a mixed-use air-rights development. Spurred by the Northeast Corridor Improvement Project (of which it is the northern terminus), this massive undertaking will use restoration, rehabilitation and new construction to create a transit-oriented urban space that will be exciting and vibrant.

Triumph No. 1: assembling the financing

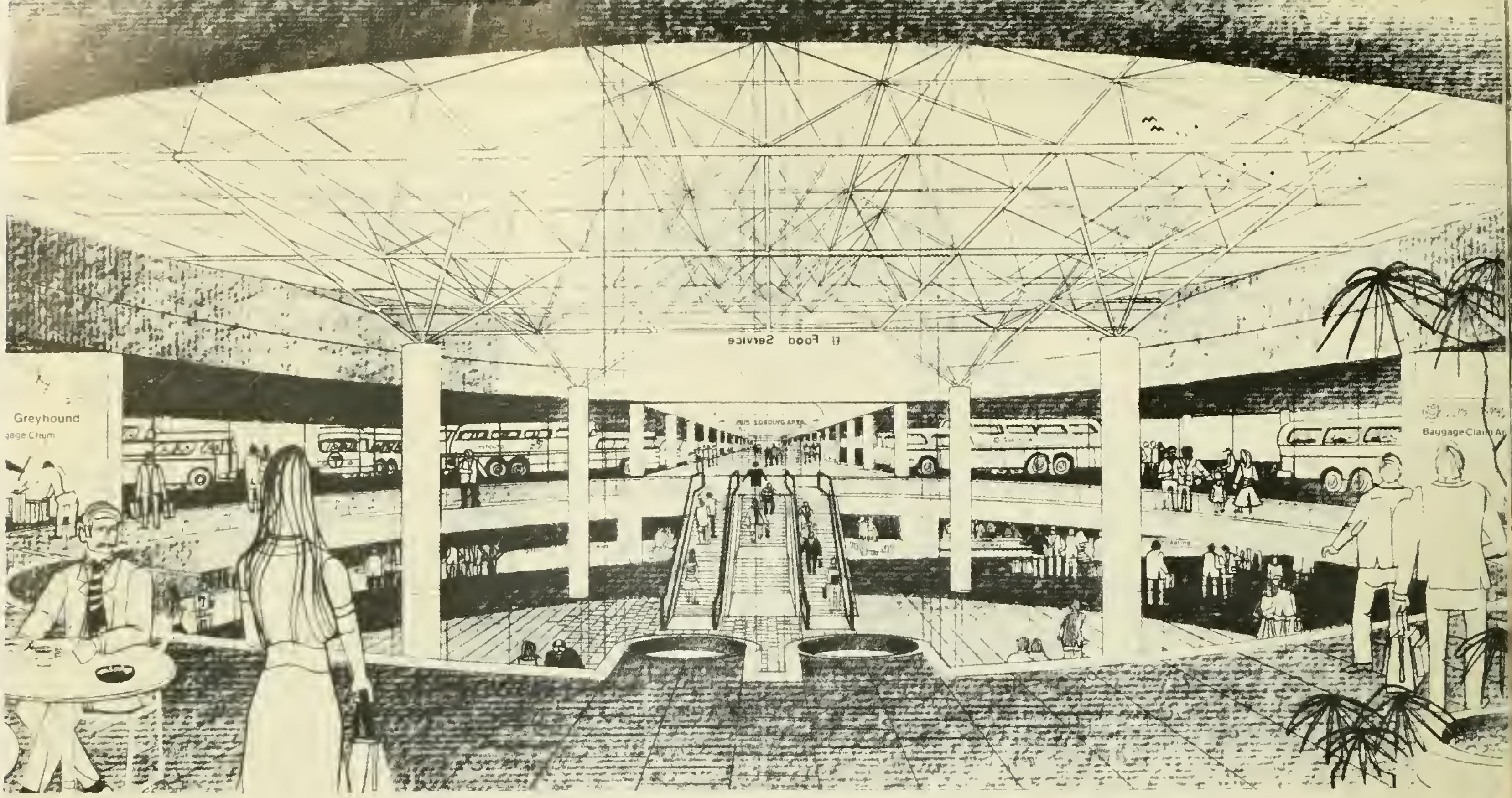
The modernization of South Station is a direct result of the Northeast Corridor Improvement Project (NECIP)—the most significant passenger-railroad revitalization project since the decline of the railroad industry in the 1940s. The NECIP (see RECORD July 1979) was established by the Railroad Revitalization and Regulatory Reform Act of 1976 (known as the 4R Act) to improve speed and dependability of inter-city rail service between Washington, D.C. and Boston. The 4R Act authorized $1.6 billion of Federal funds to achieve the program's primary goals, and $150 million for secondary goals. The primary goals, which are 100 per cent Federally funded, are for improvements directly related to safe and secure high-speed passenger service along the rails and in the stations (e.g., improvements to station infrastructure and operations, and high-level platforms). Secondary goals, in which there is a 50-50 per cent cost-shared arrangement between Federal and state or local agencies, includes work related to, but not specifically part of, rail service (e.g., parking, access to stations, and commuter transit facilities). In 1980, an additional $750 million was authorized, bringing the Federal commitment to $2.65 billion.

The South Station work is divided into three distinct elements with various Federal, state and local input in conjunction with architects and engineers.

The first phase: headhouse and tracks

The first of three elements in the transportation package is the realignment of tracks, and restoration of the pivotal headhouse. Architects Skidmore, Owings & Merrill (Washington, D.C. office) and engineers DeLeuw, Cather/Parsons have designed the tracks to be shifted to the west and lengthened to have a logical relationship to the concourse, which in turn will be re-oriented to open directly onto Dewey Square (see plan). Also designed is a new grand, open concourse, and mezzanine for tenant and retail space.

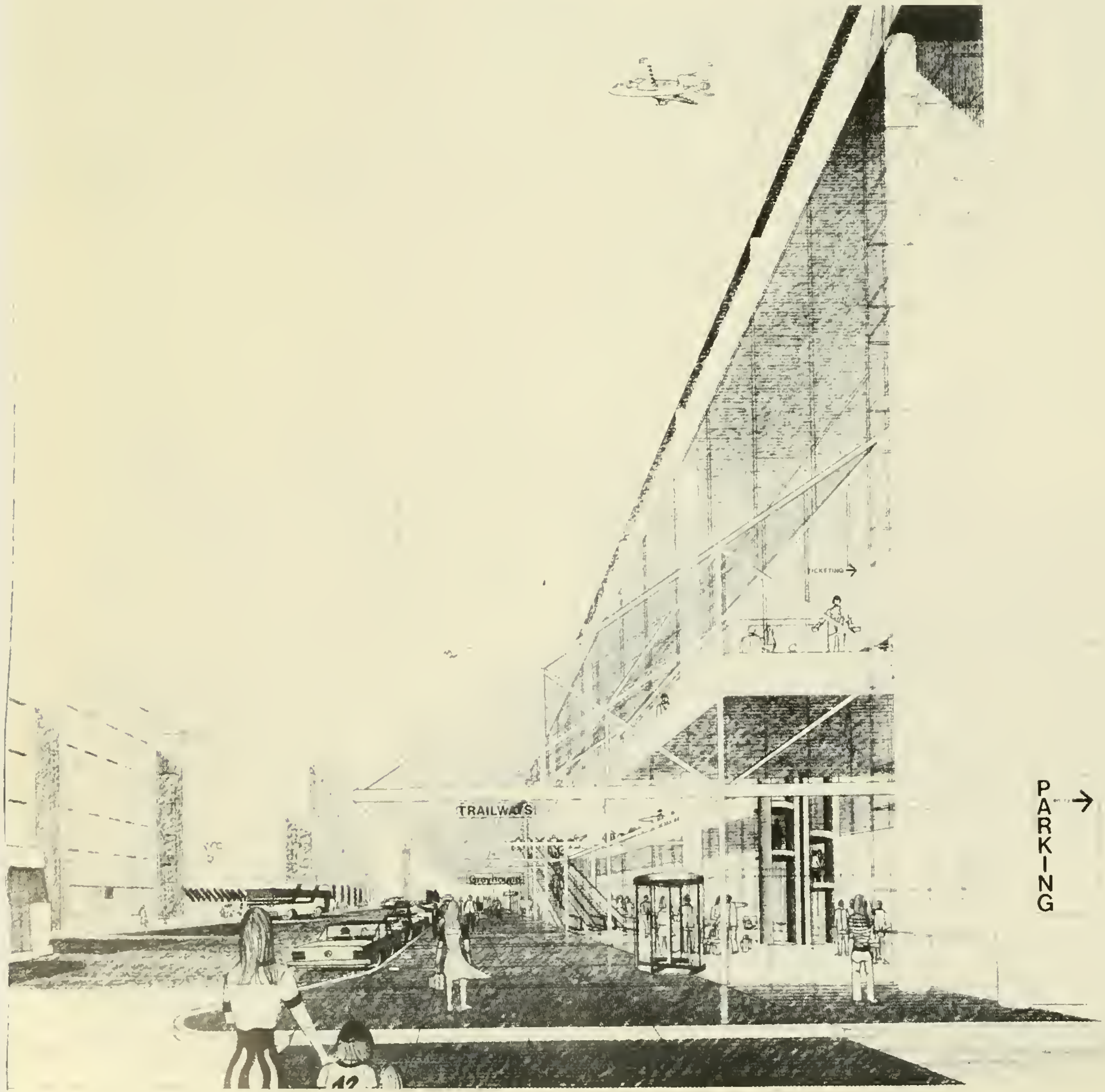
Their work also includes the exterior restoration of the headhouse, the only remaining part of the 1898 train station,

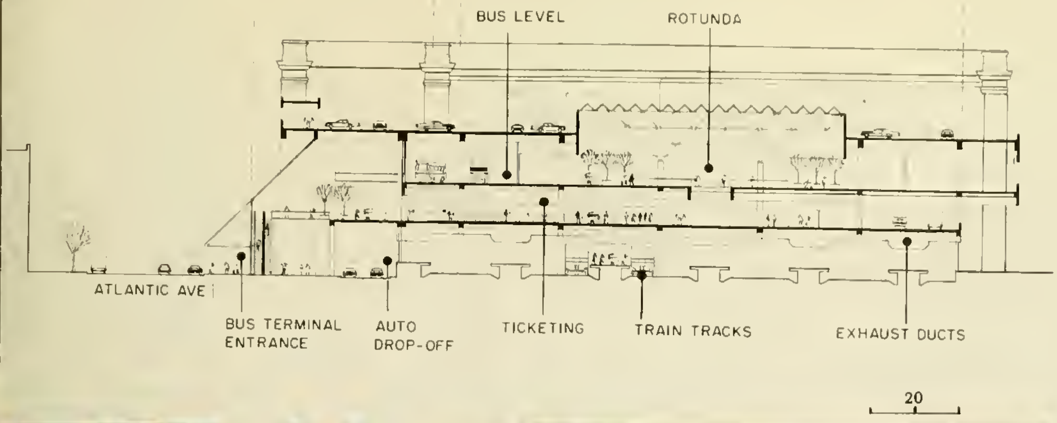


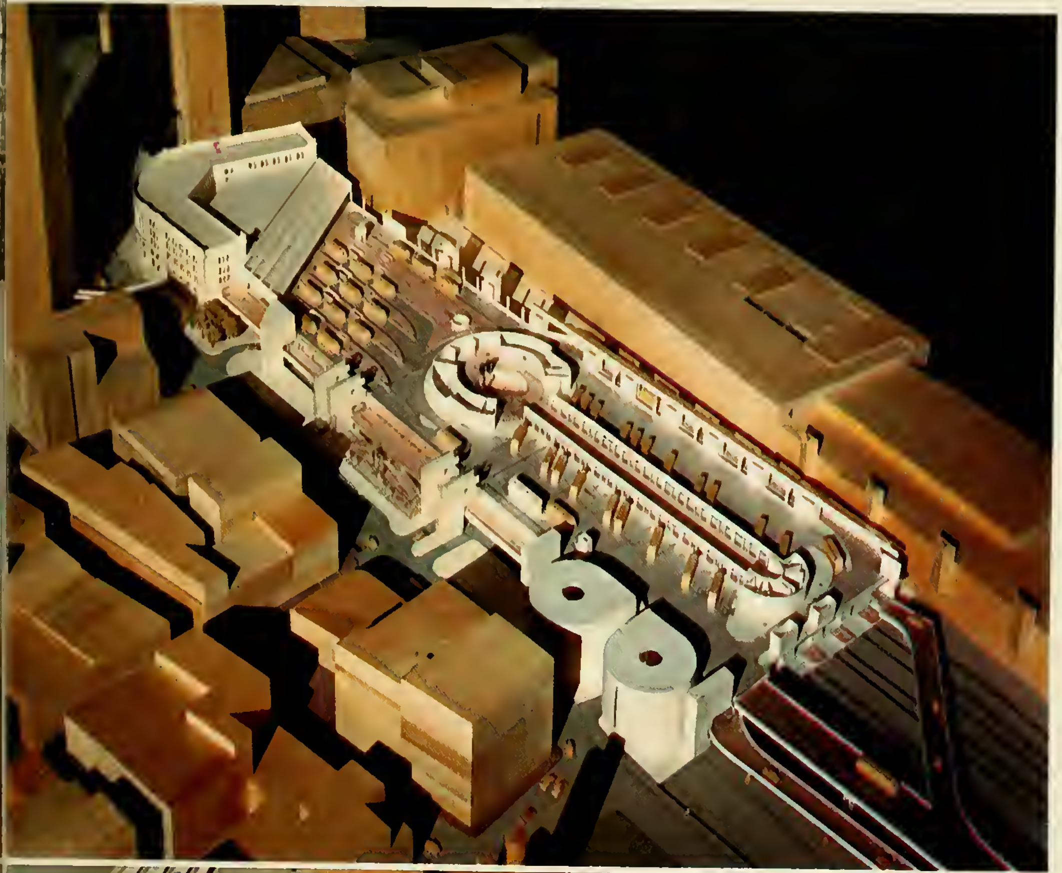
2

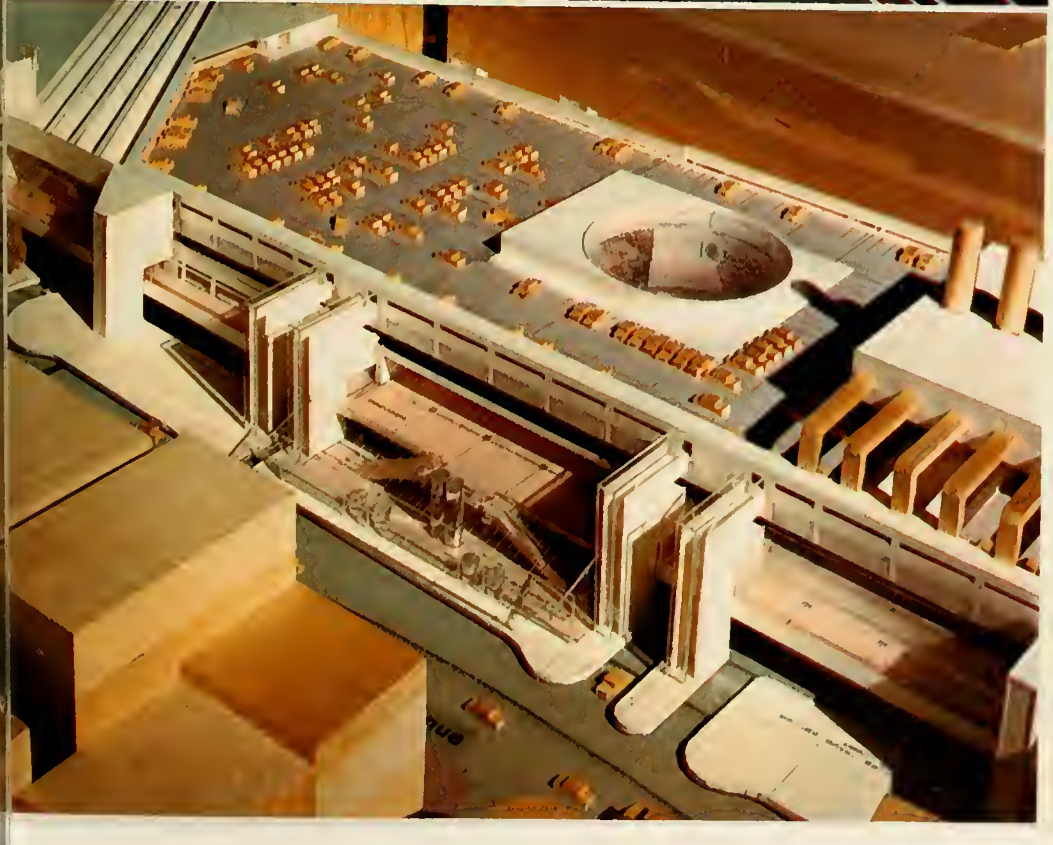
The bus terminal will service commuter and inter-city routes

This new bus terminal and parking building will fit behind, but be connected to, the headhouse (previous pages) and is next door to an existing postal station (see site plan, previous page) The terminal's major, and most publicly prominent, elevation is along Atlantic Avenue. Along this street, an articulated facade highlighted by glass canopies signals five separate entrances for the bus lobby (left) and lobbies for future air-rights development to be built over the bus terminal (overleaf). Since the terminal is above the ground level train tracks, pedestrain access is by ramps, stairs or elevators (bottom right), which lead to the rotunda circulation core (above) Topped by a skylight, the rotunda will be the interior focal point of the terminal. The third level (middle right) will be the bus staging area for commuter buses (positioned to the north of the rotunda) and intercity buses (to the south of the rotunda). They are traditionally designed with drive-through islands for commuter buses and diagonal parking lanes for inter-city buses. Because of the nature and size of the complex, it will require an extensive hvac system for proper air circulation. Exhaust from the trains on the ground level and from the buses on the third level will be sucked into huge ducts and expelled through roof-top exchangers.









which was designed by Shepley, Rutan and Coolidge (successors to the firm of H.H. Richardson) and George B. Francis, the Terminal Company's resident engineer. It was listed on the National Register of Historic Places in 1975 because of its significant role in the evolution of railroad station planning and for its Beaux-Arts style. Restoration will include its significant aspects: two-story granite base with three large arches at the entrance; upper three stories along the curve treated as a colonnade with 16 Ionic order columns and topped by triangular pediment, clock, and eagle. A five-story west wing will be rebuilt, the original having been torn down for commuter parking; this wing will be filled with stores and shops. Final contract documents will be done by architects Hugh Stubbins & Associates/Castro Blanco, a joint venture.

The second phase: the bus terminal

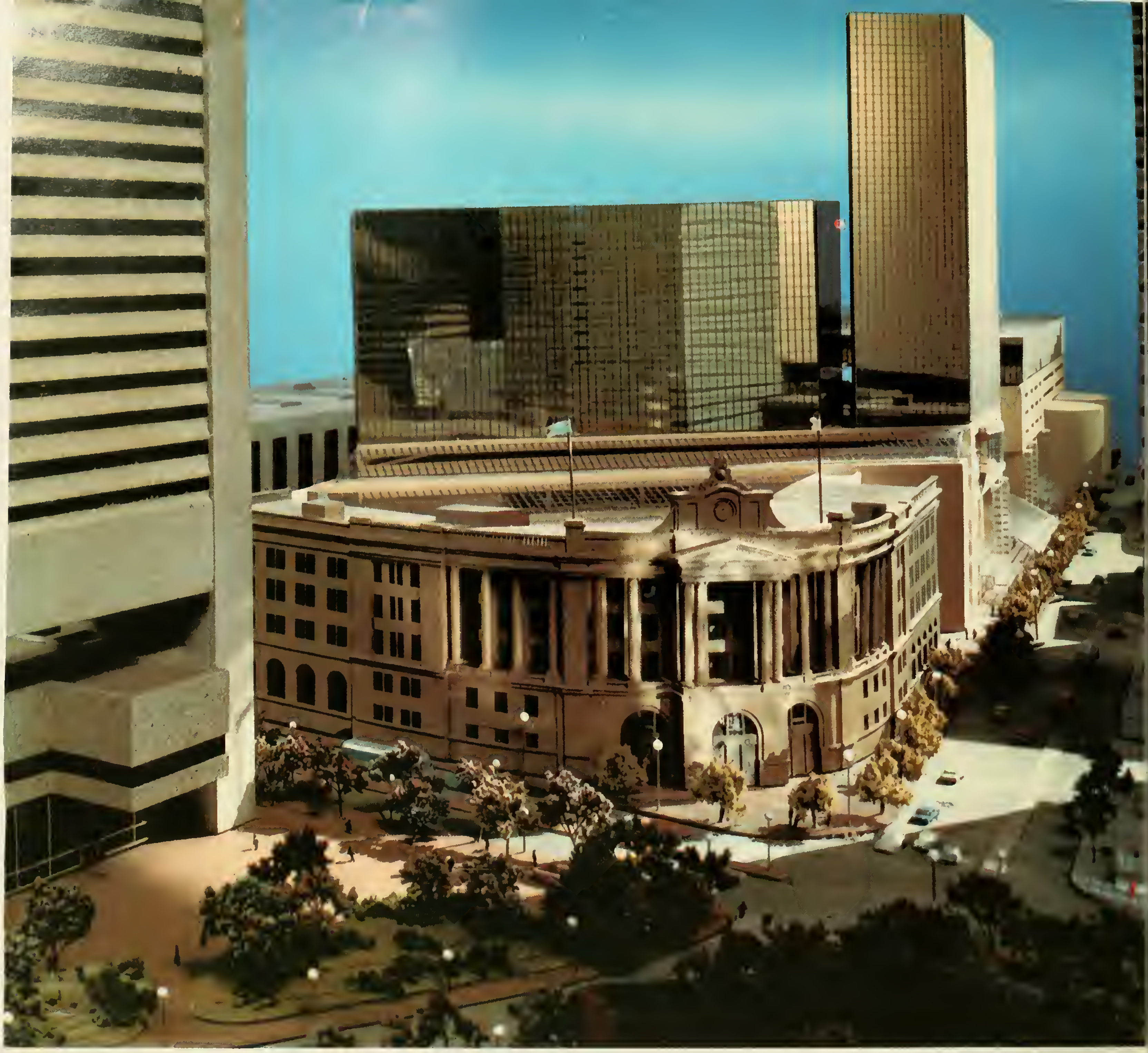
Second of three key elements of the package is the bus terminal—the hub of local commuter and inter-city bus service. The Architects Collaborative, Inc./Howard Needles Tammen and Bergendoff are responsible for designing a new structure that would provide bus-staging areas and necessary auxiliary facilities, yet link to the headhouse and provide five separate entrances along prominent Atlantic Avenue for bus lobby, and lobbies for future air-rights buildings (office tower, hotel and exposition center), and parking garage. This terminal relates to the headhouse in a functional manner but maintains its own visual identity. Because the enormous size of the terminal could easily overpower the headhouse and neighboring buildings, there was an attempt to break up its blockbuster appearance by segmenting the western elevation for the necessary five entrances.

Control of vehicular circulation is critical to accommodate increased car and bus activity in the neighborhood, and a mix of traditional devices are used to rearrange traffic patterns. A dog-bone-shaped island along Atlantic Avenue permits indentations at each entrance and a secondary loop road for pedestrian pick-up/drop-off zones. Two helices lead to upper level parking, and an intricate ramp system separates auto traffic from a maze of bus lanes at the southern end.

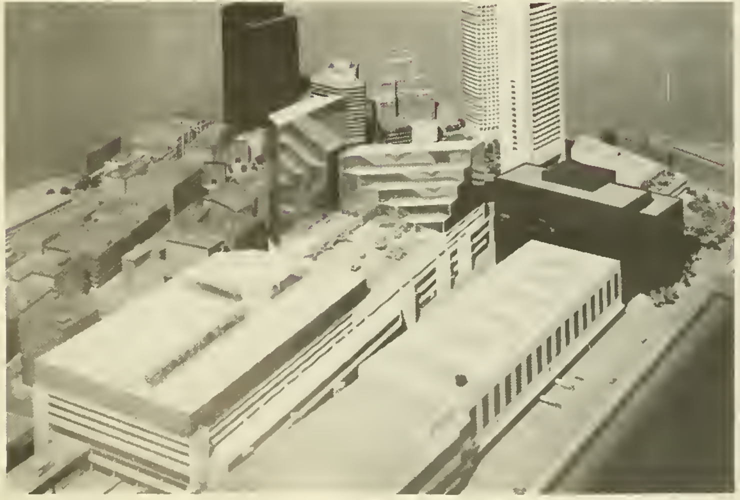
The two bus operations levels are, of necessity, elevated above the train tracks. A sky-lighted interior rotunda acts as main circulation spine between the ticketing and baggage facilities and bus boarding areas. Commuter and inter-city parks are segregated, and traditionally designed with drive-through/islands for commuter buses, and diagonal parking lanes for inter-city buses.

The local initiative: future air-rights

The third element of the package is the future air-rights development. The most up-to-date feasibility plan presented here, designed by WZMH/Habib, Inc. for their client the Boston Redevelopment Authority, includes a 12-story, 400,000-square-foot office building; a 24-story, 600-room convention hotel; and a two-story, 250,000-square-foot exposition center. This plan is dependent upon certain program-



Sam Sweezy



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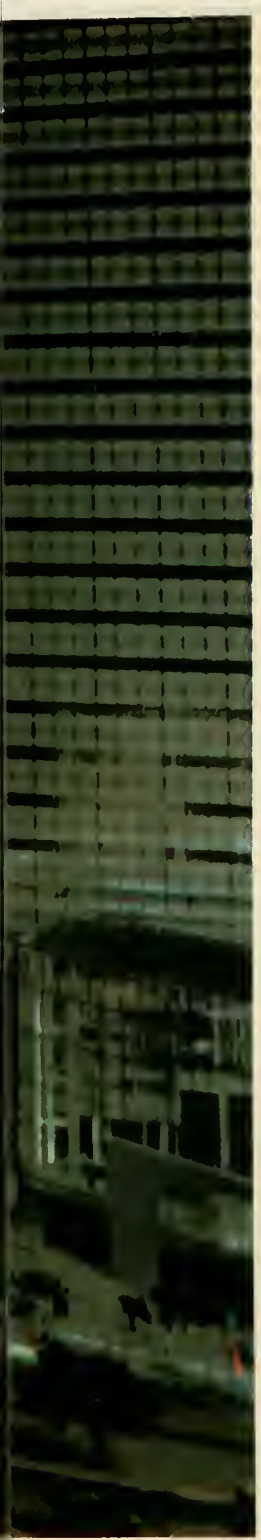
Air-rights building will add the final dimension

An office building, convention hotel and exposition center will comprise the last part of the South Station package; even though it is not a transit system it will add significantly to the economic vitality of the entire complex. To be constructed on top of the bus terminal (previous pages), the highest of the three buildings will be the hotel (center building in photo right), with a medium-rise office building and two-story exposition center flanking it. While it is too early for final design of these buildings, all could be clad in reflective glass as a unifying visual element. The hotel presents a slim element on the skyline (as seen from Atlantic Avenue above), and has been designed to capitalize on views, with angled end walls directing "lines of sight" to different aspects of Boston's nearby financial district. Views from the office building to a roof garden are enhanced by its stepped elevation (left). This kind of development is a superb way to provide private investment opportunities, while augmenting a project that is publicly financed.



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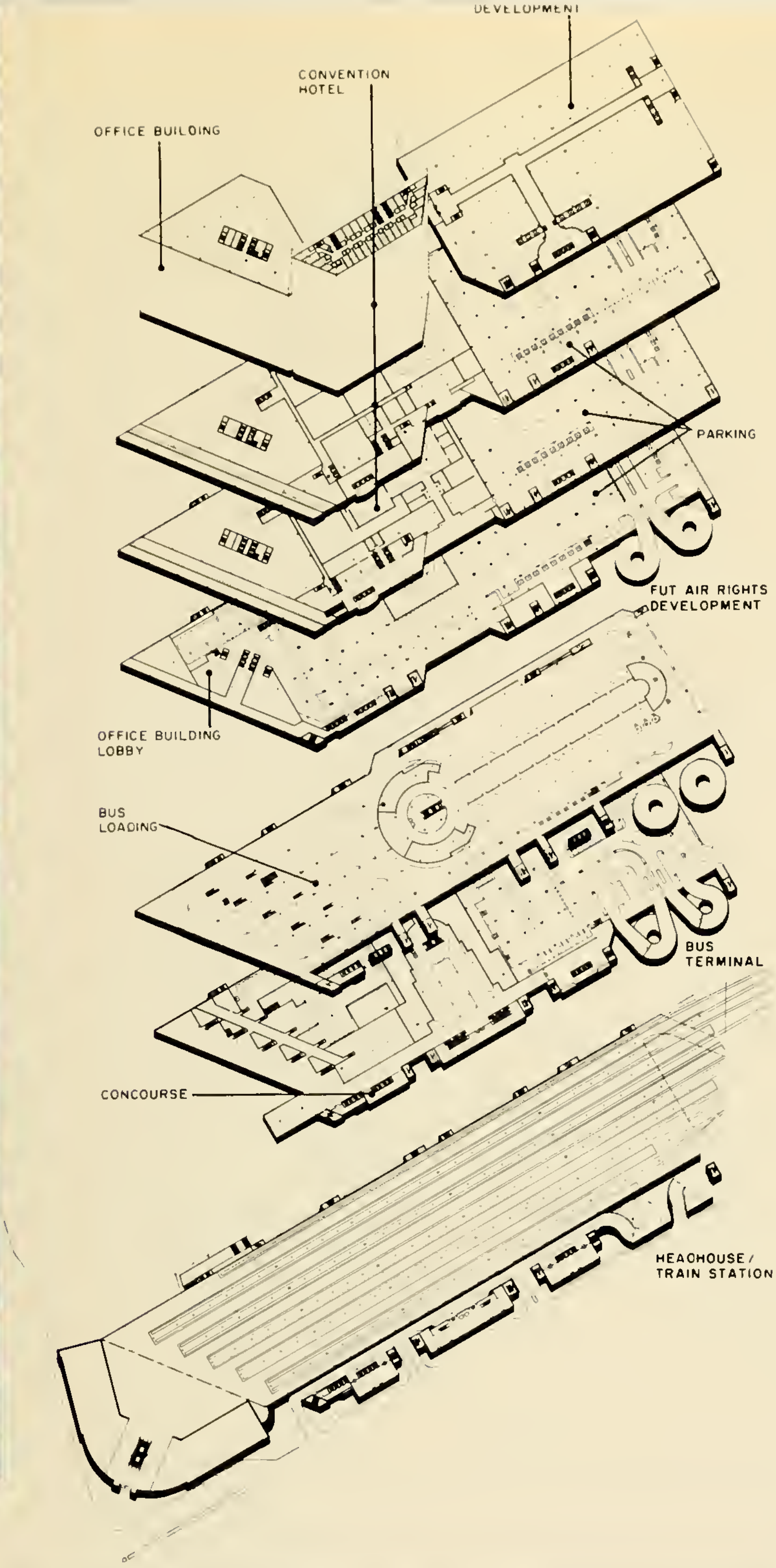
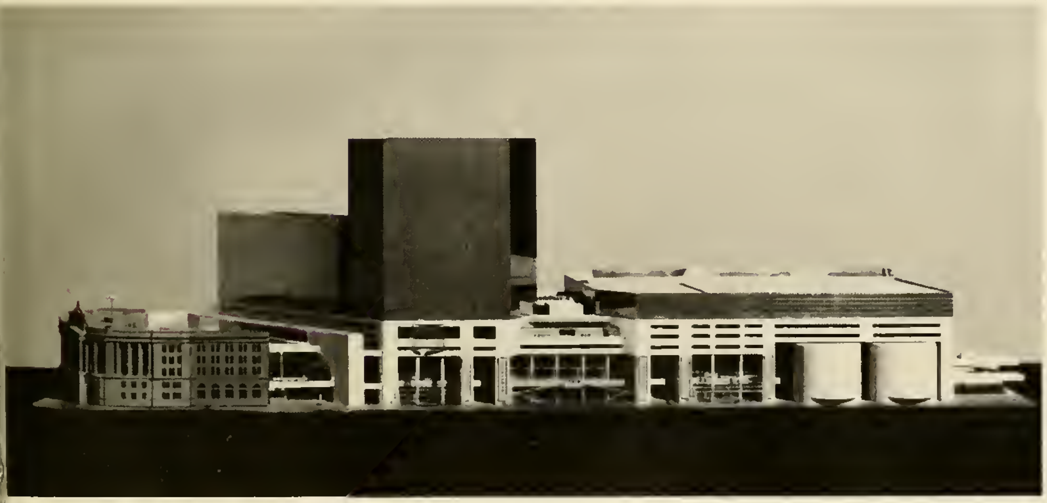


EXPLODED VIEW OF COMPLEX

Sam Sweezy



matic requirements at ground level. The most important of these is the structural load-bearing column size and the column placement on the train track level, thus pre-determining building height for the air-rights structures. The highest and most prominently sited tower is the hotel, trapezium-shaped. Its northern elevation aligns with that of the office building, which correlates to the diagonal slice of the train room at ground level. With another slanted elevation to the south, views are directed away from the tracks.

Auxiliary benefits: neighborhood impact

Perhaps the most influential aspect of the whole package will be its potential effect on the neighborhood. One project just completed is a bus terminal, designed by Skidmore, Owings & Merrill (Boston office) for Trailways Company to be vacated once the South Station bus terminal is completed. (It will then be used by other transit agencies). And an office building at Dewey Square owned by Rose Development Company is under construction. The Leather District (across the street from the bus terminal), once the center of the shoe industry and now quite dilapidated, is being considered for conversion into loft apartments and commercial/retail outlets. Another proposal is for the revitalization of Fort Point Channel, one of the last links in Boston's famed waterfront rediscovery program. A 50-page report called the "Boston Downtown Waterfront Project," from the Boston Educational Marine Exchange and written by Felicia Reed Clark as project director, delineates potential shore areas for commercial and recreational opportunities and specific proposals for action.

Upon completion, South Station Transportation Center will be a junction for diverse transit paths, yet a catalyst for neighborhood reawakening and will affect the day-to-day lives of thousands of commuters, travelers, shoppers and office workers.

SOUTH STATION TRANSPORTATION CENTER, Boston, Massachusetts. Funding agencies: *Federal Railroad Administration—Hanan Kivett, chief architect; Massachusetts Bay Transportation Authority—William Buckley, project manager; Boston Redevelopment Authority—Robert J. Ryan, director; Mathew Coogan, project manager.* Engineers for NECIP: *DeLeuw, Cather/Parsons, a joint venture.* Architects: Skidmore, Owings & Merrill (Washington, D.C. office)—*David M. Childs, partner-in-charge of design; Richard Giegengack, associate partner for design; Marilyn Jordan Taylor, associate partner; R. Joseph Trammell, project manager; Wilfried Taubert and Patrick Collins, senior designers.* Hugh Stubbins & Associates/Castro Blanco, a joint venture—*Emmet Glynn, project manager HSA; Michael Hicks, assistant project manager CB.* The Architects Collaborative Inc./Howard Needles Tammen and Bergendoff, a joint venture—*Norman Fletcher, principal TAC; Frances X. Hall, principal HNTB; Royston Daley, project manager TAC; Lawrence Shumway, assistant project manager HNTB; Gary Moneyhun, project architect TAC; Peter Sizer, project engineer HNTB.* WZMH/Habib, Inc.—*David Habib, principal in charge; Richard Manning, project executive; Paul Barnard, design executive; Chung Lee, project manager; Waiman Chan, project architect and designer; Ben Kishimoto, Nader Family, George Cole, Chris Larson, project team.*

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